THE PHASE CONTRAST EXAMINATION OF SUSPENSIONS PREPARED FROM XANTHOMA TUBEROSUM*

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The purpose of this brief communication is to present the phase contrast images of material derived from the lesions of xanthoma tuberosum and to report the morphological and chemical information obtained with this modality.

The specimen for examination was obtained from a typical lesion of xanthoma tuberosum. The tissue was teased and agitated in a small amount of physiological saline until a fairly turbid suspension was produced. Thin wet preparations, sealed with paraffin, were then prepared for examination by phase contrast microscopy, (Bausch and Lomb phase condenser and 90× phase objective, oil immersion) and photographed on panatomic-x film with a green filter at an exposure of 4 seconds. Illumination was provided by a 6 ampere ribbon filament lamp.

The typical cellular components of the xanthoma lesion are the fibroblast and the foam cell, a large phagocyte whose cytoplasm is filled with highly refractile globules (figure 1). These highly refractile bodies are birefringent when examined in polarized light. In figure 2 a group of typical cholesterol crystals are shown, and in figure 3, characteristic myelin forms are presented. These forms are the familiar birefringent semiliquid worms which are formed by heteropolar chain like compounds which have a hydrophilic and lipophilic pole when they are wetted with water. These strange forms are particularly striking in the organic phosphorus compounds like lecithin and other phospholipids (1) and suggests their presence.

Lever (2) states that the histologic appearance of xanthoma tuberosum is characterized by the presence of lipid-filled cells. The lipid has been shown to be cholesterol and phospholipid and polariscopic examination of frozen sections reveals that the droplets in the foam cells are anisotropic. Further confirmation of this basic description originally derived from fixed tissue is furnished by the phase microscopic examination of unfixed and unstained material from the xanthoma lesion.

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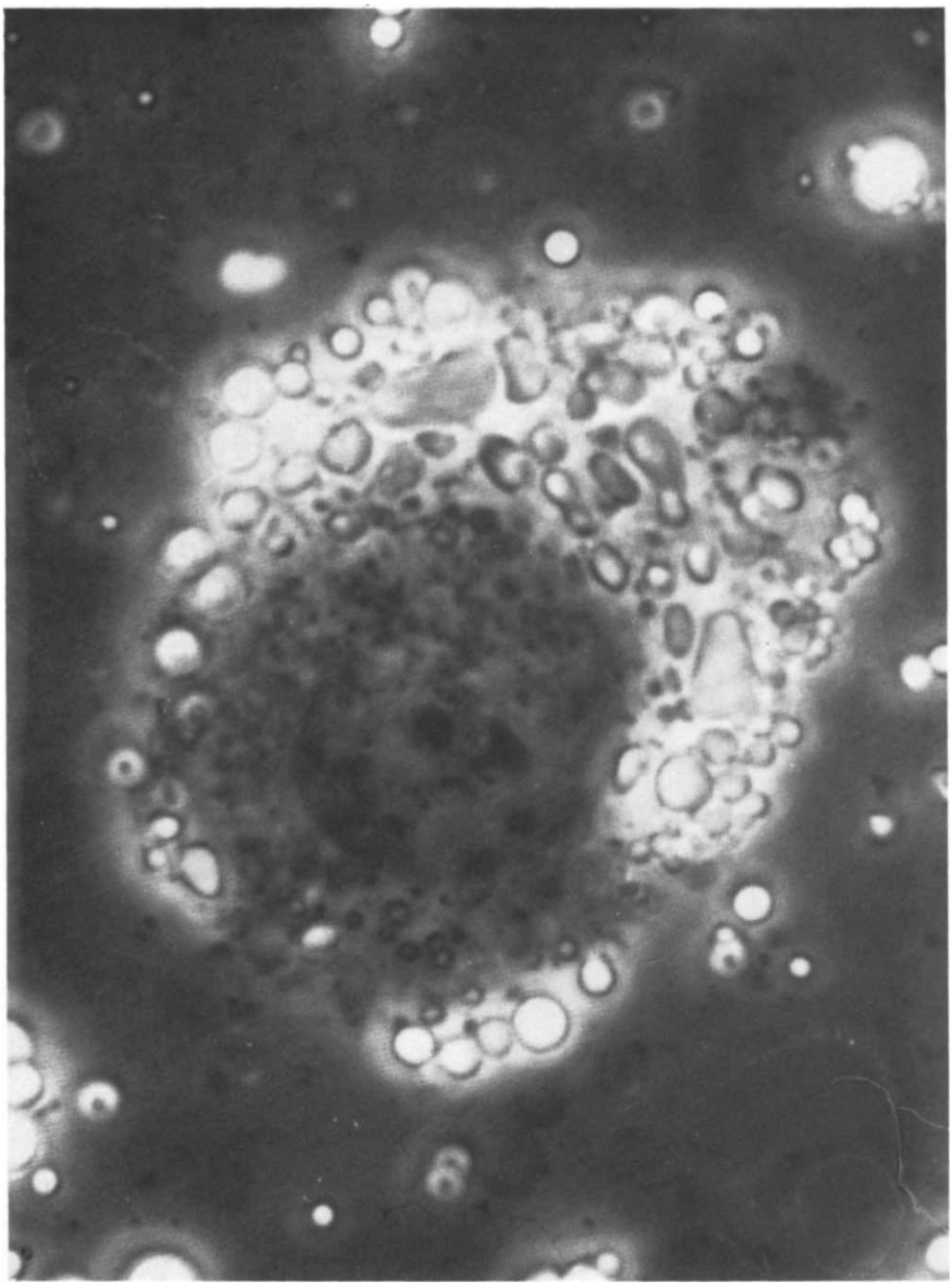

FIG. 1. Foam Cell—ca. 2500×. Phase contrast

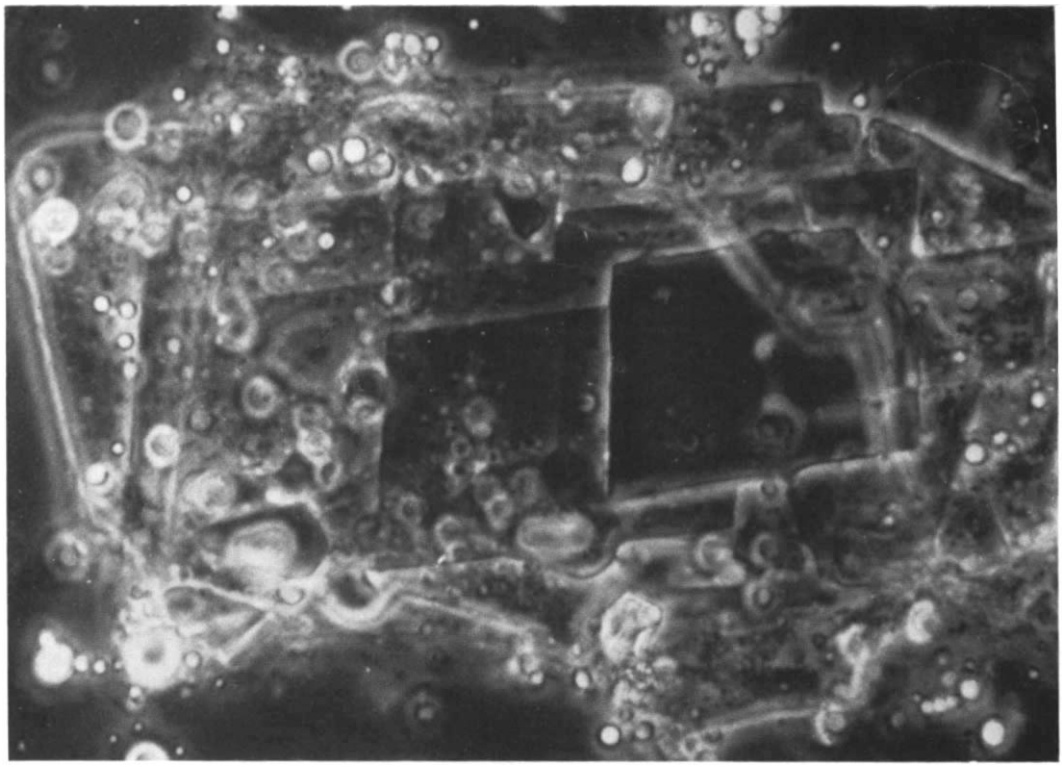

FIG. 2. Cholesterol crystals. Phase contrast

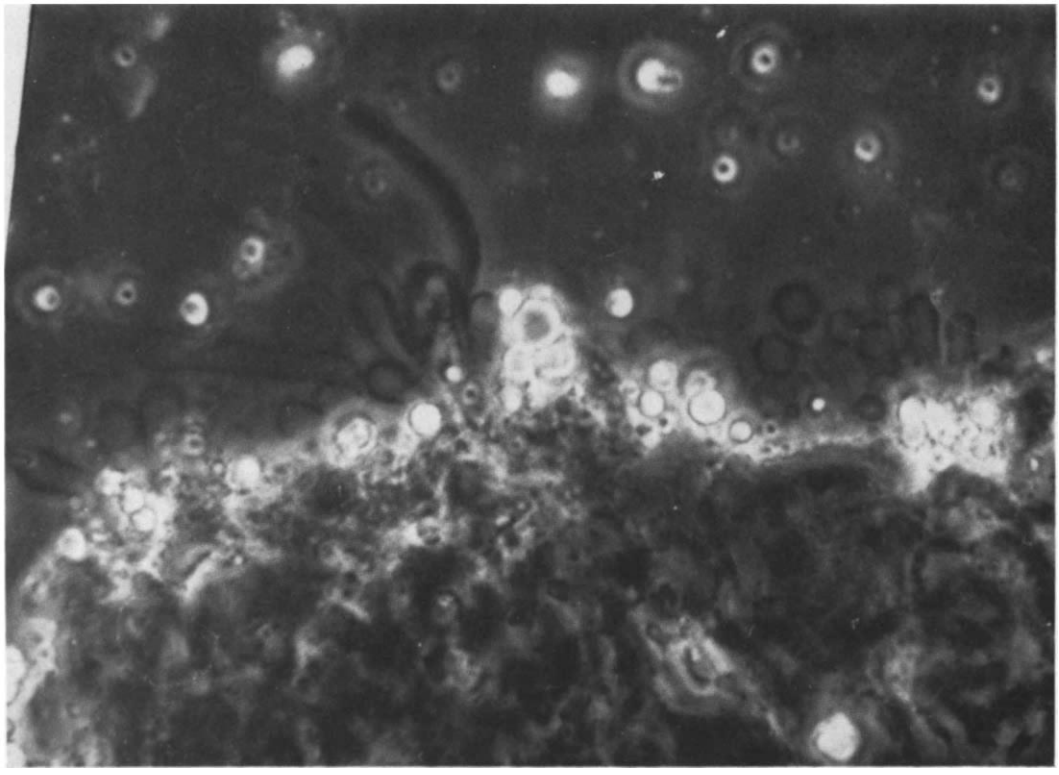

FIG. 3. Myelin forms. Phase contrast